

Serial No.: 10/777,040
Docket No.: 101-1014
Response dated October 25, 2005
Reply to the Office Action of July 26, 2005

REMARKS

Introduction

Claims 9-28, 34 and 35 have been allowed and claims 3-6 and 31-33 contain allowable subject matter. Claims 1-35 are pending in this application.

No new matter has been introduced in this amendment since all amendments are supported by the originally submitted specification, drawings, and claims.

Applicants note with appreciation the Examiner's indication that each of the references cited in the Information Disclosure Statements filed February 13, 2004 have been considered.

Objection to the Title

The title has been objected as not being descriptive. The title has been amended. Thus, the Applicants request that this objection be respectfully traversed.

Rejection under 35 USC §102

Claims 8 and 29-30 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,058,275 to Kodama (hereinafter "Kodama"). This rejection is traversed for at least the reasons stated below.

Regarding independent claim 8, at item 6 of the Office Action mailed on July 26, 2005, the Examiner alleges that Kodama teaches a method of controlling development in an electrophotographic image forming apparatus that comprises "measuring a developing current flowing between a photosensitive medium and a developing roller in a state in which a surface of the photosensitive medium is charged to a charged potential, and a developing potential is applied to the developing roller; calculating a capacitance of the photosensitive medium using the measured developing current, the charged potential, and the developing potential; calculating a thickness of the photosensitive film of the photosensitive medium using the

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capacitance; comparing the thickness of the photosensitive film with a preset allowable minimum thickness; and displaying information concerning replacement of the photosensitive medium with a new one when the thickness of the photosensitive film is less than the allowable minimum thickness (figure 12; column 7, line 12 – column 10, line 37; column 14 lines 57-61)."

Column 7, line 12 – column 10, line 37 of Kodama describes a method illustrated in FIG. 12. It is respectfully submitted that at column 7, line 12 – column 10, line 37, Kodama discloses an ammeter 214 measuring a current of a transfer roller 38. However, the ammeter 214 of Kodama cannot perform "measuring a developing current flowing between a photosensitive medium and a developing roller in a state in which a surface of the photosensitive medium is charged to a charged potential, and a developing potential is applied to the developing roller" as recited in independent claim 8 of Applicant's invention.

Column 14, lines 57-61 of Kodama describe a method illustrated in FIG. 29. It is respectfully submitted that at column 14, lines 57-61, Kodama discloses using a development current flowing through a development sleeve to determine a toner charge. FIG. 29 illustrates that the toner charge is used along with an absolute humidity to improve a transfer efficiency. However, the toner charger determination as shown in FIG. 29 of Kodama cannot perform Applicant's method of "calculating a capacitance of the photosensitive medium using the measured developing current, the charged potential, and the developing potential, calculating a thickness of a photosensitive film of the photosensitive medium using the capacitance, and comparing the thickness of the photosensitive film with a preset allowable minimum thickness," as recited in independent claim 8 of Applicant's invention.

Furthermore, it is respectfully submitted that neither the method of FIG. 12 nor the method of FIG. 29 of Kodama disclose "displaying information concerning replacement of the developer when the thickness of the developer is thinner than a preset allowable minimum thickness," as recited in independent claim 8 of Applicant's invention. "A claim is anticipated only if each and every element as set forth in the claim is found either expressly or inherently described in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown

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in as complete detail as contained in the... claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ 2d 1920 (Fed. Cir. 1989). "The elements must be arranged as required by the claim..." In re Bond, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990). Accordingly, since Kodama does not teach every element as recited in independent claim 8, Kodama can not be properly used to reject claim 8. Therefore, it is respectfully submitted that independent claim 8 is allowable over Kodama, and withdrawal of this rejection and allowance of this claim are earnestly solicited.

Regarding independent claim 29, at item 6 of the Office Action mailed on July 26, 2005, the Examiner alleges that Kodama teaches "a method of controlling development in an electrophotographic image forming apparatus, the method comprising: measuring a developing current flowing between a photosensitive medium; calculating a value representing at least one of a thickness of a photosensitive film of the photosensitive medium, a thickness of a developer on a surface of the developing roller, and a quantity of development on the surface of the photosensitive medium using the measured developing current; and generating information concerning replacement of at least one of the photosensitive medium, the developing roller, and the developer, according to the calculated value (column 7, line 12 – column 10, line 37; column 14 lines 57-61)."

Column 7, line 12 – column 10, line 37 of Kodama describes a method illustrated in FIG. 12. It is respectfully submitted that at column 7, line 12 – column 10, line 37, Kodama discloses an ammeter 214 measuring a current of a transfer roller 38. The transfer roller 38 transfers paper past a photoconductor drum 23. However, the ammeter 214 of Kodama cannot perform "measuring a developing current flowing between a photosensitive medium," as recited in independent claim 29 of Applicant's invention.

Column 14, lines 57-61 of Kodama describe a method illustrated in FIG. 29. It is respectfully submitted that at column 14, lines 57-61, Kodama discloses using a development current flowing through a development sleeve to determine a toner charge. FIG. 29 illustrates that the toner charge is used along with an absolute humidity to improve a transfer efficiency. However, the toner charge determination as shown in FIG. 29 of Kodama cannot perform

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Applicant's method of "calculating a value representing at least one of a thickness of a photosensitive film of the photosensitive medium, a thickness of a developer on a surface of the developing roller, and a quantity of development on the surface of the photosensitive medium using the measured developing current," as recited in independent claim 29 of Applicant's invention.

Furthermore, it is respectfully submitted that neither the method of FIG. 12 nor the method of FIG. 29 of Kodama disclose "generating information concerning replacement of at least one of the photosensitive medium, the developing roller, and the developer, according to the calculated value," as recited in independent claim 29 of Applicant's invention. "A claim is anticipated only if each and every element as set forth in the claim is found either expressly or inherently described in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as contained in the... claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ 2d 1920 (Fed. Cir. 1989). "The elements must be arranged as required by the claim..." In re Bond, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990). Accordingly, since Kodama does not teach every element as recited in independent claim 8, Kodama can not be properly used to reject claim 8. Therefore, it is respectfully submitted that independent claim 29 is allowable over Kodama, and withdrawal of this rejection and allowance of this claim are earnestly solicited. Further, for at least the reasons that claim 30 depends from allowable claim 29, claim 30 is also allowable, and withdrawal of the rejection of this claim is earnestly solicited.

Rejection under 35 USC §103

Claims 1-2 and 7 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Kodama in view of U.S. Patent No. 5,761,590 to Sato (hereinafter "Sato"). This rejection is traversed for at least the reasons stated below.

Regarding independent claim 1, at item 8 of the Office Action, the Examiner admits that

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Kodama "does not teach a supply roller in the developing device" However, the Examiner states that Sato "teaches a developing device having a developing roller 10 and a supplying roller 11." The Examiner then alleges that Kodama is view of Sato "suggest an electrophotographic image forming apparatus comprising: a photosensitive medium; a charging unit to charge a surface of the photosensitive medium to a uniform potential; an exposure unit to scan light over the surface of the photosensitive medium to form an electrostatic latent image on the surface of the photosensitive medium; a developing roller to develop the electrostatic latent image by applying developer to the electrostatic latent image; a developer supplying roller to supply the developer to the developing roller; a transfer unit to transfer the developed image on the surface of the photosensitive medium to a sheet of print paper; a current measuring unit to measure a developing current flowing between the developing roller and the photosensitive medium; and a controlling unit to calculate a value representing at least one of a thickness of a photosensitive film of the photosensitive medium, a thickness of the developer on a surface of the developing roller, and a quantity of development on the surface of the photosensitive medium using the measured developing current, and to display information concerning replacement of a consumable or to control development parameters according to the calculated value." The Examiner states that "[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to use the tracking of Kodama with the image forming device of Sato to obtain stable transfer regardless of the state of the recording medium and the toner (column 1 lines 42-45)."

It is respectfully submitted that although FIGS. 11 and 20 of Kodama illustrate an image forming apparatus having an ammeter 214 that measures current at a transfer roller 38 to transfer paper past a photoconductor drum 23, Kodama does not teach or suggest "a current measuring unit to measure a developing current flowing between the developing roller and the photosensitive medium," as recited in independent claim 1 of Applicant's invention. Accordingly, although FIGS. 11 and 20 illustrate the image forming apparatus having a CPU 14, there is no teaching or suggestion that the CPU 14 calculates a value representing at least one of a thickness of a photosensitive film of the photosensitive medium, a thickness of the developer on

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a surface of the developing roller, and a quantity of development on the surface of the photosensitive medium using the measured developing current," also as recited in independent claim 1 of Applicant's invention.

Regarding the invention by Sato, the patent illustrates a developing roller 32 and a supply roller 31. However, there is no teaching or suggestion in Sato of "a current measuring unit to measure a developing current flowing between the developing roller and the photosensitive medium," as recited in independent claim 1 of Applicant's invention. Thus, it is respectfully submitted that neither Kodama nor Sato, separately or in any combination thereof, teach or suggest, among other things, "a current measuring unit to measure a developing current flowing between the developing roller and the photosensitive medium," as recited in claim 1 of Applicant's invention.

It is respectfully submitted that in order to "establish *prima facie* obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art." In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Furthermore, "all words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). See also MPEP § 2143.03. Accordingly, it is respectfully submitted that since neither Kodama nor Sato teach or suggest every element as recited in independent claim 1, independent claim 1 is allowable over both Kodama and Sato separately or in any hypothetical combination thereof, and withdrawal of this rejection and allowance of this claim are earnestly solicited. Further, for at least the reasons that claims 2 and 7 depend from allowable claim 1, claims 2 and 7 are also allowable, and withdrawal of the rejection of these claims is earnestly solicited.

Conclusion

There being not other objections or rejections, it is submitted that the application is in a condition of allowance, and an early action to this effect is courteously solicited.

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No Fee has been incurred by this Amendment. However, if any further fees are required in connection with the filing of this Amendment, please charge the same to our deposit account number 502827.

Should any questions remain unresolved, the Examiner is respectfully requested to telephone Applicant's attorney.

Respectfully submitted,

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